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PATENT

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Applicants : Bateman *et al.* Customer No.: 21003
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INFORMATION DISCLOSURE STATEMENT

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Carmella L. Stephens
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41,328
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Carmella L. Stephens
Signature

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Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. §§1.97 and 1.98, Applicants respectfully request that the documents listed below in reverse chronological order and on the accompanying PTO Form 1449 be considered by the Examiner and made of record in the above-referenced application. Copies of the listed documents are provided herewith in two bound volumes. Several of the documents are also listed on the enclosed International Search Report and International

Preliminary Examination Report for International Application No. PCT/AU02/00542, of which the present application is a continuation application.

1. GenPept Database Acc. No. AAH 26919, submitted April 4, 2002.
2. Fitzgerald et al. (2001) "A new FACIT of the collagen family: COL21A1", FEBS Letters 505: 275-280.
3. Koch et al. (2001) " $\alpha 1(XX)$ collagen, a new member of the collagen subfamily, fibril-associated collagens with interrupted triple helices", The Journal of Biological Chemistry 276: 23120-23126.
4. International Patent Publication No. WO 01/42285, published June 14, 2001.
5. Dgene Database Acc. No. AAB 88340, entered May 23, 2001.
6. GenPept Database Acc. No. AAK 38350, submitted April 11, 2001.
7. International Patent Publication No. WO 01/18022, published March 15, 2001.
8. GenPept Database Acc. No. AAB 42581, entered February 8, 2001.
9. European Patent Publication No. EP 1 067 182, published January 10, 2001.
10. Fitzgerald et al. (2001) "The N-terminal N5 subdomain of the $\alpha 3(VI)$ chain is important for collagen VI microfibril formation", The Journal of Biological Chemistry 276: 187-193.
11. International Patent Publication No. WO 00/58473, published October 5, 2000.

12. Gilges et al. (2000) "Polydom: a secreted protein with pentraxin, complement control protein, epidermal growth factor and von Willebrand factor A domains", Biochem J. 352: 49-59.
13. Chen et al. (1999) "Assembly of a novel cartilage matrix protein filamentous network: molecular basis of a differential requirement of von Willebrand factor a domains", Molecular Biology of the Cell 10: 2149-2162.
14. Deák et al. (1999) "The matrilins: a novel family of oligomeric extracellular matrix proteins", Matrix Biology 18: 55-64.
15. International Patent Publication No. WO 98/53071, published November 26, 1998.
16. GenPept Database Acc. No. AI 115125, entered September 2, 1998.
17. GenBank Acc. No. NP 038620, published in 1998.
18. Emsley et al. (1998) "Crystal structure of the von Willebrand factor A1 domain and implications for the binding of platelet glycoprotein Ib", The Journal of Biological Chemistry 273: 10396-10401.
19. Emsley et al. (1997) "Crystal structure of the I domain from integrin $\alpha 2\beta 1$ ", The Journal of Biological Chemistry 272: 28512-28517.
20. Kuo et al. (1997) "Type VI collagen anchors endothelial basement membranes by interacting with type IV collagen", The Journal of Biological Chemistry 272: 26522-26529.

21. Bienkowska et al. (1997) "The von Willebrand factor A3 domain does not contain a metal ion-dependent adhesion site motif", *The Journal of Biological Chemistry* 272: 25162-25167.
22. Zaverio M. Ruggeri (1997) "Perspectives series: cell adhesion in vascular biology", *J. Clin. Invest.*, 99: 559-564.
23. Robertson et al. (1997) "Mapping and characterization of a novel cochlear gene in human and in mouse: a positional candidate gene for a deafness disorder, DFNA9", *Genomics* 46: 345-354.
24. GenBank Acc. No. O 42163, submitted in July 1997.
25. GenBank Acc. No. NP 058042, published in 1997.
26. GenBank Acc. No. NP 034900, published in 1997.
27. Beck et al. (1996) "The C-terminal domain of cartilage matrix protein assembles into a triple-stranded α -helical coiled-coil structure", *J. Mol. Biol.* 256: 909-923.
28. Chan et al. (1996) "Site-directed mutagenesis of human type X collagen", *The Journal of Biological Chemistry* 271: 13566-13572.
29. Tuckwell et al. (1996) "The A-domain of integrin $\alpha 2$ binds specifically to a range of collagens but is not a general receptor for the collagenous motif", *Eur. J. Biochem.* 241: 732-739.
30. GenBank Acc. No. NP 034899, published in 1996.
31. GenBank Acc. No. 1589549, published in 1996.
32. GenBank Acc. No. P11276, submitted December 1995.

33. Qu et al. (1995) "Crystal structure of the I-domain from the CD11a/CD18 (LFA-1, $\alpha_1\beta_2$) integrin", Proc. Natl. Acad. Sci. USA 92: 10277-10281.
34. Haudenschild et al. (1995) "The role of coiled-coil α -helices and disulfide bonds in the assembly and stabilization of cartilage matrix protein subunits", The Journal of Biological Chemistry 270: 23150-23154.
35. Lee et al. (1995) "Crystal structure of the domain from the α subunit of integrin CR3 (CDb/CD18)", Cell 80: 631-638.
36. Hansen et al. (1995) "Prediction of O-glycosylation of mammalian proteins: specificity patterns of UDP-GalNAc: polypeptide N-acetylgalactosaminyltransferase", Biochem. J., 308: 801-813.
37. Chan et al. (1995) "The three heavy-chain precursors for the inter- α -inhibitor family in mouse: new members of the multicopper oxidase protein group with differential transcription in liver and brain", Biochem. J., 306: 505-512.
38. Lefebvre et al. (1995) "Type X collagen gene expression in mouse chondrocytes immortalized by a temperature-sensitive simian virus 40 large tumor antigen", The Journal of Cell Biology 128: 239-245.
39. Engel et al. (1994) "Domain organizations of extracellular matrix proteins and their evolution", Development Supplement: 35-42.
40. Thompson et al. (1994) "Clustal W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice", Nucleic Acids Research 22: 4673-4680.

41. McMahon et al. (1994) "C₂C₁₂ cells: biophysical, biochemical, and immunocytochemical properties", Am. J. Physiol., 266: 1795-1802.
42. Denis et al. (1993) "Localization of von Willebrand factor binding domains to endothelial extracellular matrix and to type VI collagen", Arteriosclerosis and Thrombosis 13: 398-406.
43. Chan et al. (1993) "Characterization of an arginine 789 to cysteine substitution in α 1(II) collagen chains of a patient with spondyloepiphyseal dysplasia", The Journal of Biological Chemistry 268: 15238-15245.
44. Colombatti et al. (1993) "Type A modules: interacting domains found in several non-fibrillar collagens and in other extracellular matrix proteins", Matrix 13: 297-306.
45. GenBank Acc. No. P 56199, published in 1993.
46. GenBank Acc. No. S 78476, submitted January 1993.
47. Trueb et al. (1992) "Type XIV collagen is a variant of undulin", Eur. J. Biochem., 207: 549-557.
48. Specks et al. (1992) "Structure of recombinant N-terminal globule of type VI collagen α 3 chain and its binding to heparin and hyaluronan", The EMBO Journal 11: 4281-4290.
49. Yamagata et al. (1991) "The complete primary structure of type XII collagen shows a chimeric molecule with reiterated fibronectin type III motifs, von Willebrand factor a motifs, a domain homologous to a nancollagenous region of type IX collagen, and short collagenous domains with an Arg-Gly-Asp site", The Journal of Cell Biology 115: 209-221.

50. Parente et al. (1991) "Human type VII collagen: cDNA cloning and chromosomal mapping of the gene", Proc. Natl. Acad. Sci. USA 88: 6931-6935.
51. Chu et al. (1990) "Mosaic structure of globular domains in the human type VI collagen α_3 chain: similarity to von Willebrand factor, fibronectin, actin, salivary proteins and aprotinin type protease inhibitors", The EMBO Journal 9: 385-393.
52. GenBank Acc. No. NP 000204, published in 1990.
53. Chu et al. (1989) "Sequence analysis of α_1 (VI) and α_2 (VI) chains of human type VI collagen reveals internal triplication of globular domains similar to the A domains of von Willebrand factor and two α_2 (VI) chain variants that differ in the carboxy terminus", The EMBO Journal 8: 1939-1946.
54. Ellis et al. (1988) "Sequence and expression of mRNAs encoding the α_1 and α_2 subunits of a DHP-sensitive calcium channel", Science 241: 1661-1664.
55. GenBank Acc. No. NP 004361, published in 1987.
56. Sadler et al. (1985) "Cloning and characterization of two cDNAs coding for human von Willebrand factor", Proc. Natl. Acad. Sci. USA 82: 6394-6398.
57. Mole et al. (1984) "Complete primary structure for the zymogen of human complement factor B", The Journal of Biological Chemistry 259: 3407-3412.
58. Bateman et al. (1984) "Abnormal type I metabolism by cultured fibroblasts in lethal perinatal osteogenesis imperfecta", Biochem. J., 217: 103-115.
59. U.S. Patent No. 4,424,279 to Bohn et al., issued January 3, 1984.

60. Schneike et al. (1983) "Embryonic lethal mutation in mice induced by retrovirus insertion into the $\alpha 1(I)$ collagen gene", *Nature* 304: 315-320.
61. Sudo et al. (1983) "In vitro differentiation and calcification in a new clonal osteogenic cell line derived from newborn mouse calvaria", *The Journal of Cell Biology* 96: 191-198.
62. Paulsson et al. (1982) "Radioimmunoassay of the 148-kilodalton cartilage protein", *Biochem. J.*, 207: 207-213.
63. GenBank Acc. No. NM 013556, published in 1982.
64. U.S. Patent No. 4,018,653 to Mennen, issued April 19, 1977.
65. U.S. Patent No. 4,016,043 to Schuurs et al., issued April 5, 1977.
66. Bonner et al. (1974) "A film detection method for tritium-labelled proteins and nucleic acids in polyacrylamide gels", *Eur. J. Biochem.*, 46: 83-88.
67. Marmur et al. (1962) "Determination of the base composition of deoxyribonucleic acid from its thermal denaturation temperature", *J. Mol. Biol.*, 5: 109-118.

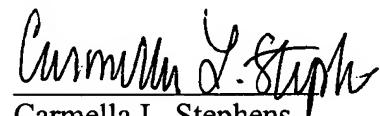
Identification of the listed documents is not to be construed as an admission of the applicants or attorneys for applicants that such citations are available as "prior art" against the subject application. If the Examiner applies the documents as prior art against any claim in the application and applicants determine that the cited documents do not constitute "prior art" under United States law, applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of the documents.

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Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should the documents be applied against the claims of the present application.

This Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits of referenced application. Therefore, Applicants do not believe that any fee is due in connection with the submission of this paper. However, if any fee is due, or if any overpayment has been made, the Commissioner is authorized to charge any such fee or credit any overpayment, to our Deposit Account No. 02-4377. Duplicate copies of this sheet are enclosed.

Respectfully submitted,
BAKER BOTTS L.L.P.


Carmella L. Stephens
PTO Reg. No. 41,328

30 Rockefeller Plaza
44th Floor
New York, NY 10012-4498

Attorney for Applicants
(212) 408-2500